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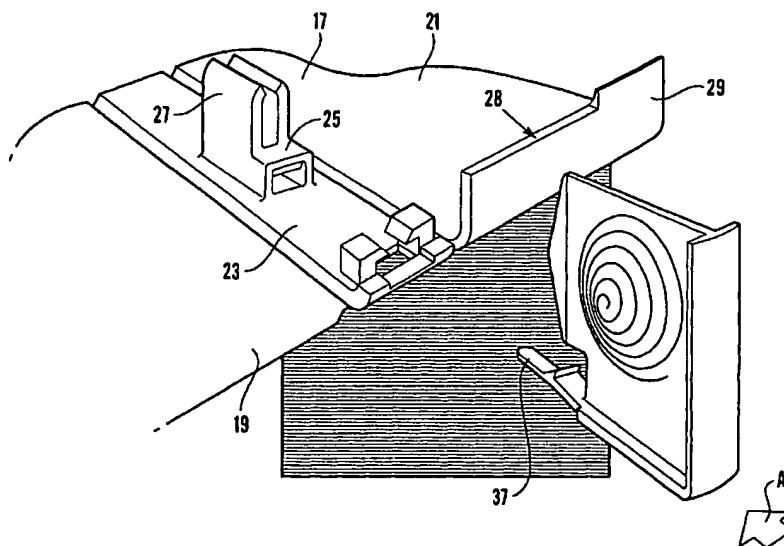
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(54) Title: SECURITY DEVICE



(57) Abstract: A security device (1) comprises attachment means (3) by which the device may be attached to a container (17), and alarm triggering means for triggering an alarm if unauthorised removal from a store of a container with the device attached thereto is attempted, the device being arranged such that removal of at least the alarm triggering means from the container (17) when the device is attached thereto is possible only when the container is open.

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SECURITY DEVICE

The present invention relates to security devices for preventing or deterring the theft of goods from stores. The invention has particular application to containers of information storage media, especially disk shaped data carriers, for example compact disks, including CDs and DVDs.

According to a first aspect, the invention provides a security device comprising attachment means by which the device may be attached to a container, and alarm triggering means for triggering an alarm if unauthorised removal from a store of a container with the device attached thereto is attempted, the device being arranged such that removal of at least the alarm triggering means from the container when the device is attached thereto is possible only when the container is open.

Preferably the security device may be attached to a closed container.

By "an alarm" is meant any means of raising the alert, that unauthorized removal of the container from a store (or the like) is being attempted. The alarm may, for example, comprise an audible and/or visual signal, and/or it may comprise the barring of the escape of a person attempting such unauthorised removal, for example.

According to a second aspect, the invention provides a kit of parts comprising a security device according to a first aspect of the invention and a said container.

According to a third aspect, the invention provides a container comprising a security device according to the first aspect of the invention attached or attachable thereto.

According to a fourth aspect, the invention provides a container adapted to receive a security device according to the first aspect.

Preferably the container includes attachment means by engagement therewith the attachment means of the security device may attach the security device to the container.

Preferably the security device is attachable to the container by being at least partially insertable therein. Preferably the security device and the container are arranged such that the device is at least partially insertable into the container when the container is closed.

In preferred embodiments of the invention the container comprises first and second container parts which may be brought together to close the container and separated to open the container. Advantageously, the first and second parts of the container may be joined to each other, for example hingedly joined to each other.

Preferably attachment of the security device to the container comprises at least partial insertion of the device between said first and second parts of the container. Preferably such insertion may be carried out when the container is closed. Most preferably the first and second parts of the container are arranged such that there is a gap between at least portions of the first and second parts of the container when the container is closed, through which gap the security device may be at least partially inserted.

Preferably when the security device is attached to the container by at least partial insertion therein, the alarm triggering means is contained, more preferably wholly contained, within the container.

In particularly preferred embodiments of the invention, the container includes a third part, preferably a spine part, between the first and second parts, to which the first and second parts are hingedly joined. Preferably the third part of the

container includes attachment means by engagement therewith the attachment means of the security device attaches the security device to the container.

Advantageously, the container and the security device may be arranged such that engagement of the attachment means of the security device with the attachment means of the container occurs substantially automatically upon at least partial insertion of the security device into the container.

Preferably the attachment means of the security device comprises at least one projection and/or recess which is arranged to engage with a corresponding recess and/or projection of the attachment means of the container. Preferably part of the attachment means of the security device and/or part of the attachment means of the container is resiliently flexible, thereby allowing such engagement.

Advantageously, the container and/or the security device may include guide means arranged to guide the insertion of the security device into the container and into attachment therewith.

Most preferably, at least partial insertion of the security device into the container is between said first and second parts of the container when the container is closed, such that the attachment means of the security device engages with attachment means of the container provided on a said third part of the container (preferably a spine part of the container) to which the first and second parts are hingedly attached.

Preferably the security device is attached to the container through packaging which encloses the closed container. The packaging preferably comprises film wrapping, for example polymer film wrapping.

Advantageously, therefore, the security device preferably includes packaging piercing means, arranged to pierce the packaging of the container to allow the

insertion of the security device into the container. Preferably the piercing means automatically pierces the packaging upon attempted insertion of the security device into the container.

Preferably the alarm triggering means is provided on or in a main part of the security device, and the attachment means of the security device is joined to the main part. Advantageously, the main part of the security device may be a generally thin flat part, for example to facilitate its insertion between the first and second parts of the container.

Preferably the alarm triggering means is adhered to the main part of the security device. For example, the alarm triggering means may be carried by an adhesive label adhered to the main part.

Preferably the alarm triggering means is arranged to trigger an alarm by means of a radio frequency signal being transmitted between the alarm system and the triggering means. Preferably the alarm triggering means comprises one or more antennae, for example in the form of one or more coil(s). However, at least in the broadest aspects of the invention, the alarm may be triggered by any conventional means.

In preferred embodiments of the invention, the alarm triggering means may be removed from the container once attached thereto by being broken off the container, and preferably may be so removed substantially only by this method. Advantageously, therefore, the security device may include a frangible region located between the main part thereof and the attachment means thereof. The frangible region preferably comprises a relatively thin region of the security device. Preferably the main part of the security device may be broken away from the attachment means thereof by a snapping action. Preferably the attachment means of the security device is substantially unremovable from the container when attached thereto.

Some preferred embodiments of the invention will now be described by way of example, with reference to the accompanying drawings, of which:

Figure 1 shows an embodiment of a security device according to the invention;

Figure 2 shows various views of a security device according to the invention before, during and after its insertion into a container according to the invention; and

Figure 3 shows a detail of a security device and container according to the invention, illustrating schematically the main part of the device being broken away from the attachment means of the device.

Figure 1 shows an embodiment of a security device 1 according to the invention. The security device comprises an attachment means 3 in the form a generally wedge-shaped projection 5 on a resiliently flexible extending section 7 thereof. Joined to the attachment means 3 is a frangible region 9 of the security device, and joined to an opposite edge of the frangible region 9 is a main part 11 of the security device. The frangible region 9 is therefore situated between the main part 11 and the attachment means 3. The main part 11 comprises a generally thin, flat part, a leading edge 13 of which includes a packaging piercing means 15 in the form of a sharpened point. The leading edge 13 of the main part 11 faces in the same orientation as the thin end of the generally wedge-shaped projection 5, i.e. in the direction indicated by the arrow A, which is the direction of insertion of the security device into a container (not shown in Figure 1). The main part 11 of the security device includes a flat surface 16 suitable for receiving an adhesive label (or the like) carrying an alarm triggering means (not shown in Figure 1).

Figure 2 (a) shows an alternative, but similar, embodiment of the security device of Figure 1. Figure 2 (b) shows part of a container 17, according to the invention. The container is preferably a container for information storage

media, for example one or more media disk shaped data carriers, especially compact disks or DVDs. The container 17, which is open, comprises a first part 19, a second part 21, and a third spine part 23 to which the first and second parts are hingedly joined. The interior of the third part 23 includes attachment means 25 with which the attachment means 3 of the security device 1 is arranged to engage. Specifically, the attachment means 25 of the container comprises an opening containing a projecting catch member with which the generally wedge-shaped catch member 5 of the attachment means 3 of the security device is arranged to engage (i.e. interlock) upon insertion of a leading portion 27 of the attachment means of the security device 1. The attachment means 25 of the container comprises part of a retaining member 27 of the container which is arranged to retain a support (not shown) for example for carrying a compact disk or DVD holder.

Figure 2(b) shows the container 19 open merely in order to show the attachment means of the container. In practice, the security device 1 is preferably attached to the container 17 by being inserted into the container while the container is closed as shown in Figure 2(c). The second part 21 of the container 17 includes a cut away region 28 of an edge portion 29 thereof. (The first part 19 of the container also includes an edge portion 31 – as shown in Figure 2(c) and 2(d). This edge region 31 is not shown in Figure 2(b) for clarity purposes). The cut away region 28 of the edge portion 29 creates a gap 33 between the first and second parts 19 and 21 of the container 17 when the container is closed, as shown in Figure 2(c). The gap 33 is situated adjacent to the third spine part 23 of the container. The security device 1 may therefore be inserted into the container through gap 33 into attachment with the container when the container is closed as shown in Figure 2(d). Insertion of the security device 1 fully into the gap 33 causes mutual engagement between the attachment means 3 of the security device 1 and the attachment means 25 of the container.

Preferably such insertion of the security device 1 into the closed container 17 is carried out by the retailer before the container containing the storage media (e.g. CD or DVD) is placed on display in a store. Preferably the container containing the storage media is supplied to the store with the container closed and enclosed within exterior packaging, e.g. a film wrapping. The retailer inserts the security device 1 into the container 17 through the packaging. This is achieved by the sharply pointed piercing means 15 or the security device 1 automatically piercing a slit in the packaging as the security device is inserted into the container. The slit pierced in the packaging is wide enough to allow insertion of the security device, but is not large enough to enable the packaging to be removed from the container without difficulty.

The embodiment of the security device 1 shown in Figure 2 does not include a frangible region (unlike the embodiment shown in Figure 1). In the Figure 2 embodiment the leading section 37 of the attachment means 3 of the security device 1 is resiliently depressable, and accessible once the container is opened, thereby allowing disengagement of the attachment means 3 of the security device from the attachment means 25 of the container, and allowing removal of the entire security device.

In contrast, the embodiment of the security device 1 shown in Figure 1 does not permit the disengagement of its attachment means when engaged with the container. Instead, the main part 11 of the security device 1 must be snapped away from the attachment means 3 by breaking the frangible region 9. This is achieved by bending the main part 11 in a direction perpendicular to the direction of insertion of the security device into the container, as indicated by arrow B in Figures 1 and 3.

The embodiment of the security device 1 shown in Figure 3 is slightly different to that shown in Figure 1. In Figure 3, the frangible region 9 comprises a groove 9A. The groove 9A terminates at portion 9B which inhibits bending of the main part 11 in the direction opposite to direction B.

It will be appreciated that the frangible region of the security devices of Figures 1 and 3 cannot be broken in the direction indicated by arrow C due to the join between the frangible region 9 and the attachment means 3 being of significant length in this direction. Hence the security device cannot be broken away from the container when the container is closed.

In use, the retailer de-activates the alarm triggering means of the security device attached to the container when a customer purchases the CD or DVD. The customer takes away the unopened and packaged container, and removes the security device at home when he opens the container.

Claims

1. A security device comprising attachment means by which the device may be attached to a container, and alarm triggering means for triggering an alarm if unauthorised removal from a store of a container with the device attached thereto is attempted, the device being arranged such that removal of at least the alarm triggering means from the container when the device is attached thereto is possible only when the container is open.
2. A security device according to claim 1, in which the alarm triggering means is provided on or in a main part of the security device, and the attachment means is joined to the main part of the device.
3. A security device according to claim 2, in which the main part of the device is a generally thin, flat, part.
4. A security device according to claim 2 or claim 3, in which the alarm triggering means is adhered to the main part of the device, for example by an adhesive label adhered to the main part.
5. A security device according to any preceding claim, in which the alarm triggering means is arranged to trigger an alarm by means of a radio frequency signal being transmitted between an external alarm system and the triggering means.
6. A security device according to claim 5, in which the alarm triggering means comprises at least one antenna, for example in the form of a coil.
7. A security device according to claim 2 or any claim dependent thereon, which includes a frangible region located between the main part and the attachment means.

8. A security device according to claim 7, in which the frangible region comprises a relatively thin region of the security device.
9. A security device according to claim 7 or claim 8, in which the main part may be broken away from the attachment means by a snapping action.
10. A security device according to claim 2 or any claim dependent thereon, in which the main part of the device includes piercing means for piercing packaging on a said container to which the device may be attached.
11. A kit of parts comprising a security device according to any preceding claim, and a said container to which the device may be attached.
12. A kit according to claim 11, in which the container includes attachment means, by engagement with which the attachment means of the security device may attach the security device to the container.
13. A kit according to claim 11 or claim 12, in which the security device is attachable to the container by being at least partially insertable therein.
14. A kit according to claim 13, in which the security device and the container are arranged such that the device is at least partially insertable into the container when the container is closed.
15. A kit according to any one of claims 11 to 14, in which the container comprises first and second container parts which may be brought together to close the container and separated to open the container.
16. A kit according to claim 15, in which the first and second parts of the container are joined to each other, for example hingedly joined to each other.

17. A kit according to claim 15 or claim 16, in which attachment of the security device to the container comprises at least partial insertion of the device between said first and second parts of the container.

18. A kit according to claim 17, in which the first and second parts of the container are arranged such that there is a gap between at least portions of the first and second parts when the container is closed, through which gap the security device may be at least partially inserted.

19. A kit according to any one of claim 17 or claim 18, in which, when the security device is attached to the container by at least partial insertion therein, the alarm triggering means is contained, preferably wholly contained, within the container.

20. A kit according to claim 16 or any claim dependent thereon, in which the container includes a third part, preferably a spine part, between the first and second parts, to which the first and second parts are hingedly joined.

21. A kit according to claim 20, in which the third part of the container includes attachment means by engagement with which the attachment means of the security device attaches the security device to the container.

22. A kit according to claim 17 when dependent on claim 12, in which the container and the security device are arranged such that engagement of the attachment means of the security device with the attachment means of the container occurs substantially automatically upon at least partial insertion of the security device into the container.

23. A kit according to claim 12 or any claim dependent thereon, in which the attachment means of the security device comprises at least one projection and/or recess which is arranged to engage with a corresponding recess and/or projection of the attachment means of the container.

24. A kit according to claim 17 or any claim dependent thereon, in which the container and/or the security device include(s) guide means arranged to guide the insertion of the security device into the container and into attachment therewith.

25. A kit according to claim 21, in which at least partial insertion of the security device into the container is between said first and second parts of the container when the container is closed, such that the attachment means of the security device engages with attachment means of the container provided on the third part of the container.

26. A kit according to any one of claims 11 to 25, in which the security device may be attached to the container through packaging which encloses the closed container.

27. A kit according to claim 26, in which the packaging comprises film wrapping, for example polymer film wrapping.

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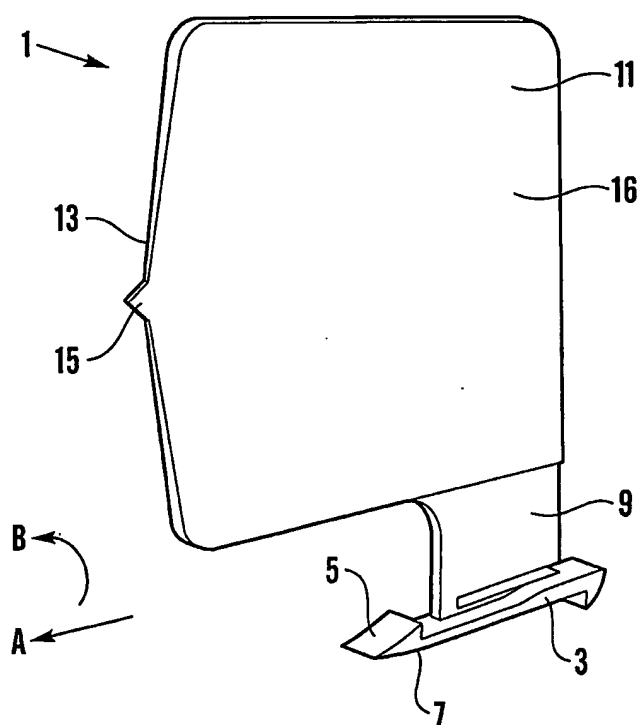


Fig. 1

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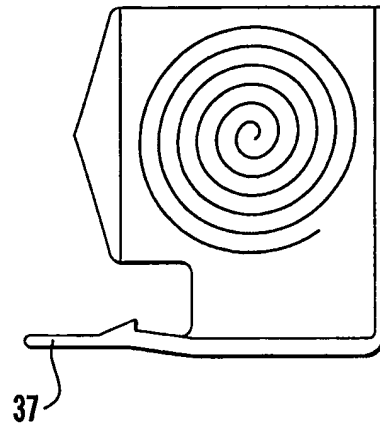


Fig. 2(a)

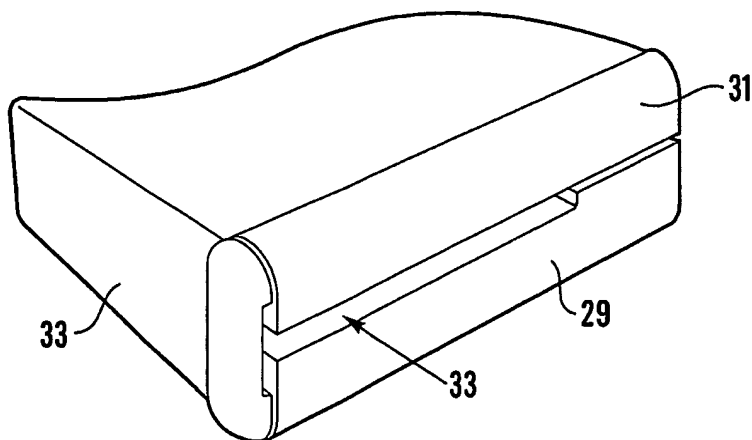


Fig. 2(c)

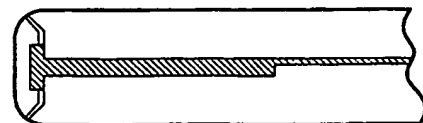
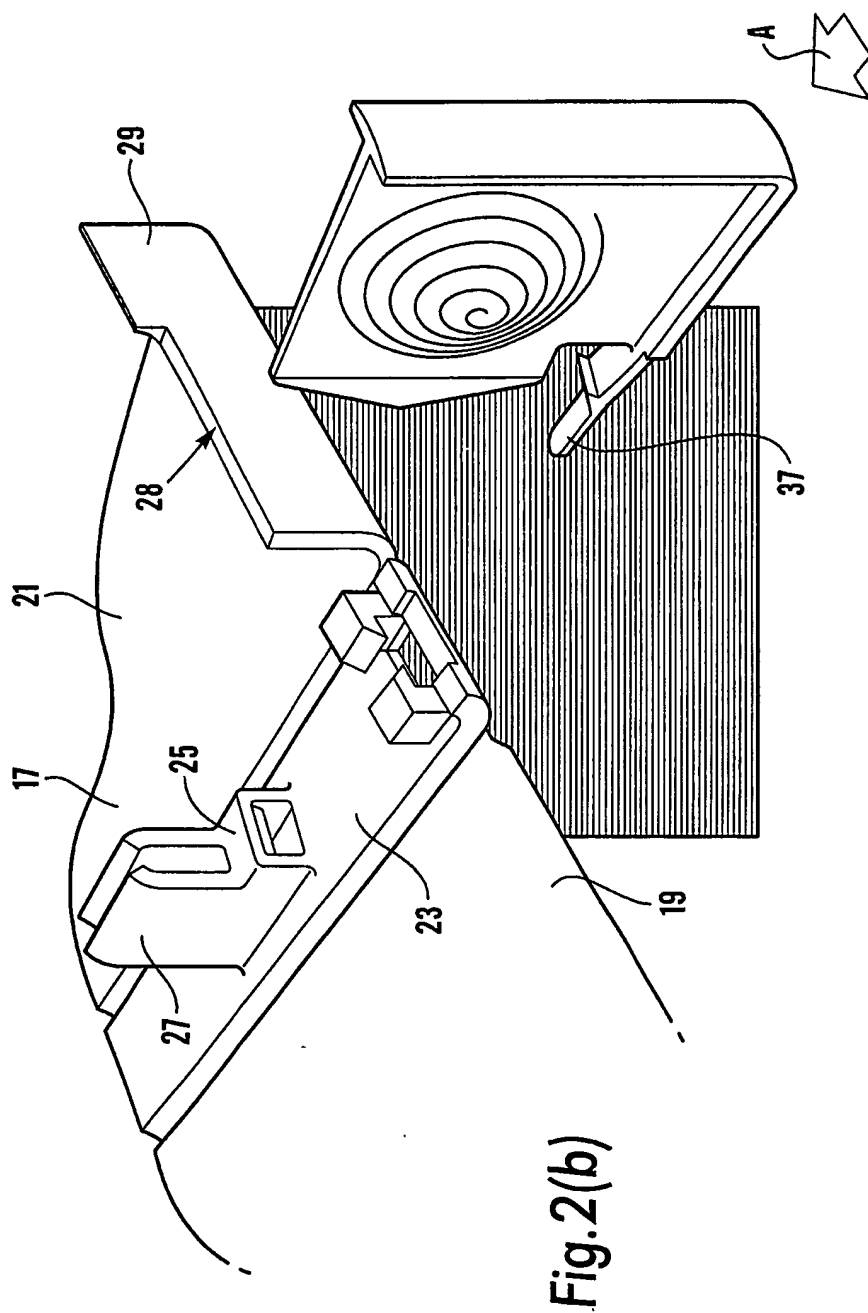


Fig. 2(d)

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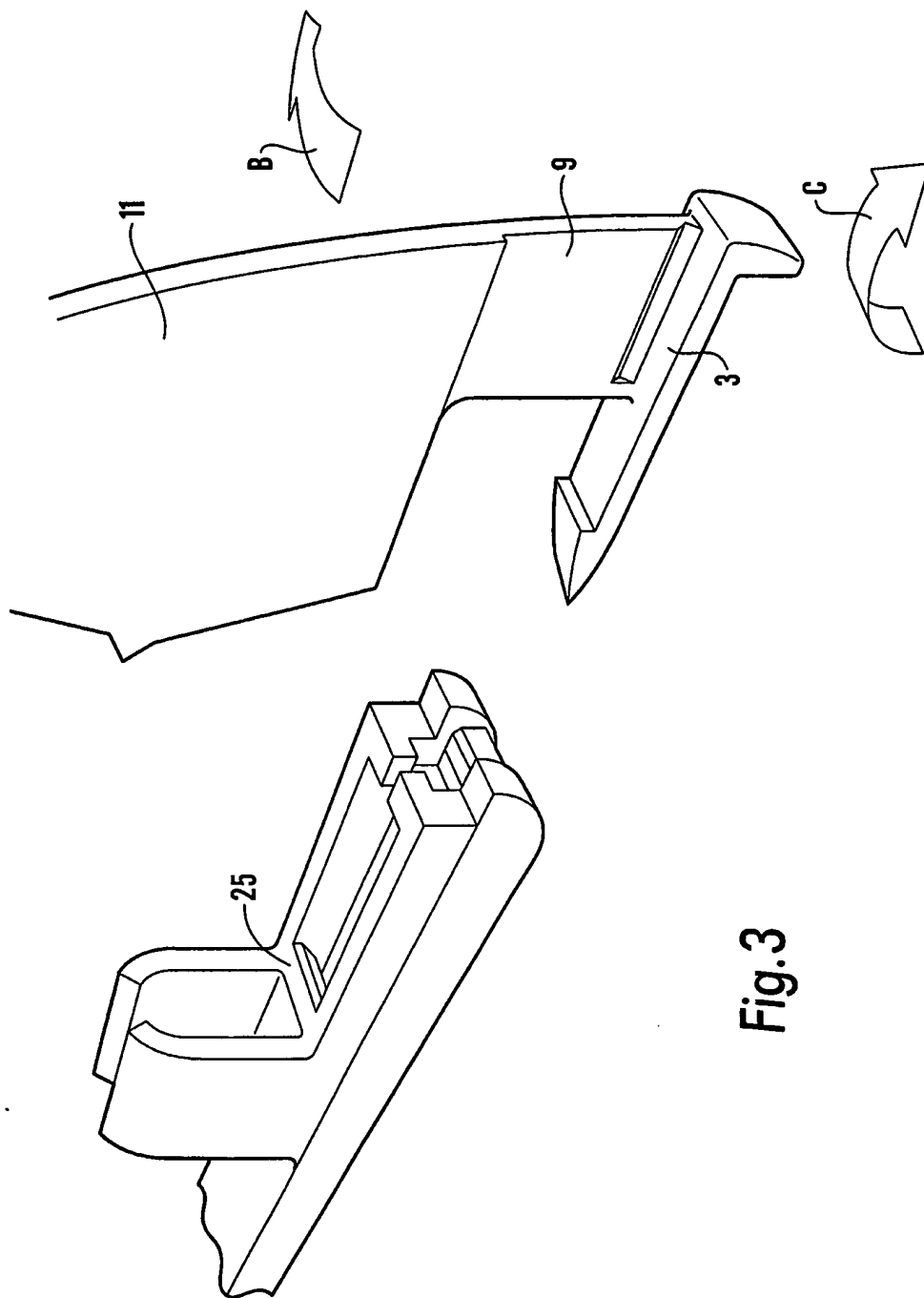


Fig.3

INTERNATIONAL SEARCH REPORT

International Application No

PCT/GB 02/05550

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 E05B73/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 E05B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 589 551 A (ALPHA ENTERPRISES INC) 30 March 1994 (1994-03-30) column 5, line 12 -column 6, line 11 figures 1,2,4,5,8,9	1-6, 11-17, 19,20, 22-24
Y		10,18, 26,27
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Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

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Date of the actual completion of the international search

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INTERNATIONAL SEARCH REPORT

International Application No

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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